**QUIZ #1 - Mendelian Genetic**

1. Two true breeding parents are crossed similar to Mendel's P generation. A tall plant is crossed with a short plant. What is the expected outcome for the F1 generation?

1. all short
2. all tall
3. all medium height
4. half tall, half short

2. If the cross from #1 is continued, what would be the expected outcome in the F2 generation?

1. all short
2. all tall
3. 3 tall, 1 short
4. half tall, half short

3. If a plant that has round seeds has a parent that has wrinkled seeds, what is its genotype? (Assume that round is dominant.)

1. RR
2. Rr
3. Rr
4. RrWw

4. This principle states that alleles separate during gamete formation:

1. principle of multiple alleles
2. principle of dominance and recessiveness
3. principle of independent assortment
4. principle of segregation

5. If you crossed two heterozygous plants, how many of the offspring will also be heterozygous?

1. All
2. Half
3. ¾
4. ½

6. A plant that has purple flowers is crossed with one that has white flowers. The offspring were half white and half purple. What were the genotypes of the parents?

1. Pp x pp
2. Pp x Pp
3. PP x pp
4. PP x WW

7. A dihybrid cross (AaBb x AaBb) will result in what offspring ratio?

1. 4:4:2:2
2. 1:3:1
3. 3:1
4. 9:3:3:1

8. Phenotype refers to an organism's:

1. genetic code
2. physical appearance
3. ratio
4. parents

9. In each case where Mendel crossed true breeding plants as parents, the offspring displayed only one of the two traits seen in the parents. This observation supports which principle of genetics?

1. segregation
2. independent assortment
3. dominance and recessiveness
4. allele frequency

10. Which of the following outcomes would you expect from the following cross: tall, round (TTRR) x short, wrinkled (ttrr).

1. all offspring tall and round
2. all offspring short and wrinkled
3. half tall, round; half short wrinkled
4. 9:3:3:1

11. Gregor Medel used what organism in his experiments?

12. Draw and label the steps of mitosis.

13. Compare and contrast mitosis and meiosis.

14. What is the difference between heterozygous and homozygous?

15. What is dominance? What is ressiveness?

**Bonus:** Construct a dihybrid cross of PpWw x PpWw.